

patients at risk for COPD (aged 45 ≤ years ≤ 85, ≥15 pack years) were included. Lung function (FEV1 and FEV6) was measured by copd-6 (mini-spirometer, Vitalograph), followed by ordinary spirometry (COPD diagnosis FEV1/FVC post bronchodilation ratio <70). Time consumed was recorded and costs calculated (national average nurse wage). Univariate logistic regression and receiver operating characteristic (ROC) curves were utilized. **RESULTS:** In all, 305 patients (21 centers in Sweden), females 57%, mean (standard deviation, SD) age 61.2 (8.4) years, FEV1/FVC 75.3 (10.2), pack years 30.3 (11.5) were included. COPD was diagnosed in 83 patients (27.2%). Copd-6 screening significantly predicted COPD by FEV1/FEV6 ratio. Patients with COPD had a mean (SD) FEV1/FEV6 of 69.0 (9.1), patients without COPD 77.7 (9.6). Sensitivity and specificity at a FEV1/FEV6 cut-off of 73.0 was 73.5% and 79.7%, respectively; area under the ROC curve was 0.800. Cost of one copd-6 measurement (~4 minutes) was SEK 19 (=€2), while the cost for an ordinary spirometry (~33 minutes) was SEK 147 (=€15). Without copd-6 pre-screening the cost of detecting one COPD patient based on age and pack years was SEK 542 (=€54). Use of copd-6 reduces the cost to SEK 283 (=€28), but also results in an 8.4% lower COPD detection rate due to copd-6 sensitivity limitations. **CONCLUSIONS:** Pre-screening with the copd-6 mini-spirometer to select patients (≥45 years; ≥15 pack years) for ordinary spirometry increased the frequency of detected COPD diagnoses from 27.2% to 73.5%. Although copd-6 sensitivity and specificity could be improved, its use in primary care may reduce the costs of detecting COPD patients.

ASSESSING THE COST-EFFECTIVENESS OF BECLOMETHASONE/FORMOTEROL IN THE TREATMENT OF MODERATE TO SEVERE PERSISTENT ASTHMA IN SPAIN

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OBJECTIVES: To estimate cost and effectiveness of beclomethasone/formoterol extrafine, fluticasone/salmeterol and budesonide/formoterol in the treatment of moderate to severe persistent asthma in Spain. **METHODS:** A Markov model was developed to represent the transition of a cohort of patients with moderate to severe persistent asthma through different health states: patients free of symptoms, patients with exacerbations and patients without exacerbations. Efficacy data was obtained from observational studies. Deterministic results were estimated and a probabilistic sensitivity analysis was conducted using statistical distributions in order to capture parameter uncertainty in the decision model. Treatment costs were obtained from literature review and a panel of clinical experts. Costs were referred to year 2009 and a time horizon of 12 weeks was chosen. Results were presented as expected cost per QALY and represented in cost-effectiveness acceptability curves (CEACs). **RESULTS:** In the deterministic analysis, the expected cost per patient was greater in the fluticasone/salmeterol cohort (€333) and the budesonide/formoterol cohort (€300) in comparison with the beclomethasone/formoterol cohort (€292). The estimated effectiveness was the same in the three cohorts. In the probabilistic analysis CEACs showed that the probability that the treatment with beclomethasone/formoterol was more cost-effective than the treatment with fluticasone/salmeterol and budesonide/formoterol using alternative values for the maximum value that the health service would be willing to pay for an additional QALY gained was greater in the beclomethasone/formoterol cohort. **CONCLUSIONS:** When beclomethasone/formoterol extrafine has been compared to fluticasone/salmeterol and budesonide/formoterol we may conclude that the first one is a dominant strategy. Results from probabilistic sensitivity analysis show that the choice of optimal strategy is independent on the maximum that the health service is prepared to pay per additional QALY gained because beclomethasone/formoterol extrafine has a greater probability of being cost-effective for all threshold values.

RESPIRATORY-RELATED DISORDERS – Patient-Reported Outcomes Studies

ADHERENCE TO MEDICATION AND HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH COPD: SGRQ—AN ALTERNATIVE METHOD TO IDENTIFY NONADHERENCE

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OBJECTIVES: Medication adherence and health-related quality of life (HRQoL) are important factors in determining success of drug treatments; although both have been studied intensively, limited data is available on the association between these factors. This study aimed: 1) to assess the relationship between adherence and HRQoL in COPD patients using generic and disease specific instruments; and 2) to evaluate the association between adherence and answers of SGRQ part 2-section 5 referring to medication use. **METHODS:** The cross-sectional study included a post-bronchodilator spirometry and completion of a self reported postal questionnaire. Information on adherence (4-item Morisky Medication Adherence Scale) and HRQoL (generic: EuroQoL—EQ-5D, disease specific: St. George's Respiratory Questionnaire—SGRQ) were obtained. Multiple linear regression model was used to analyze the association between HRQoL as dependent variable and disease severity (FEV₁), age and adherence as independent variables. Differences in answers of SGRQ part 2-section 5 between adherence stages were analyzed with Pearson Chi-square test. **RESULTS:** A total of

227 patients were included at baseline, 170 of them completed the study. The mean age was 63.83 (SD = 11.24) years, there were slightly more female patients (58%), a total of 32% (n = 55) of the participants reported themselves as high adherent, 26% (n = 44) were medium, and 42% (n = 71) were low adherent. The mean EQ-5D score was 0.55 (SD = 0.21) and the mean SGRQ total score was 56.22% (SD = 16.19). HRQoL assessed with EQ-5D and SGRQ were neither significantly related to medication adherence. Both generic and disease-specific HRQoL were associated with age and disease severity. We found significant association between the number of the positive answers of SGRQ part 2-section 5 and adherence rate (Chi-square = 30.64 p = 0.000). **CONCLUSIONS:** The study showed no significant relationship between adherence to medication and any HRQoL domain. Our results suggest that, SGRQ part 2-section 5 could be suitable to estimate adherence in patients with COPD in clinical practice.

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ASSOCIATION OF PATIENT-REPORTED INHALER SATISFACTION WITH PHYSICIAN-PERCEIVED COMPLIANCE WITH ASTHMA TREATMENT—RESULTS OF A CROSS-SECTIONAL STUDY IN FIVE EUROPEAN COUNTRIES

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OBJECTIVES: It is hypothesised that patient satisfaction with the features of an asthma inhaler directly influences compliance behaviour of asthma patients. This study investigated the relationship between physician-reported compliance of 1400 asthma patients with the degree of patient-reported satisfaction with their inhaler. **METHODS:** Data were drawn from the Adelphi Disease Specific Programme (DSP) in Asthma, a cross-sectional study of consulting patients undertaken in 2009. Data were collected from physicians for each patient and collected directly from consenting patients. Key factors analyzed were physician-reported perceptions of patient compliance on a 1–5 scale (where 1 is 'not at all compliant' and 5 is 'fully compliant') and data for patient-reported satisfaction with their inhaler including specific device features associated with convenience, dosing and inhaler mechanism. The results were tested against potential confounders including age, gender, ethnicity and current asthma severity, to ensure the relationship effect between compliance and satisfaction was distinct. **RESULTS:** There was a significant relationship between the physician-reported level of compliance and patient-reported satisfaction with their inhaler device. The investigators observed that a better perceived level of compliance was directly associated with a higher level of inhaler satisfaction (P < 0.001). Those inhaler features associated with convenience: "built to last/will not break easily"; "easy to hold and carry," "instructions are simple and easy to follow," and "no need to put the drug into the inhaler before use" accounted for four of the top five drivers of overall satisfaction. **CONCLUSIONS:** Patient satisfaction with features of their inhaler is an important factor in promoting patient compliance. If physicians made particular effort to select an inhaler that satisfies the patient, including attention to features associated with convenience, patient compliance with their asthma treatment would be expected to improve.

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SYMPTOMATIC COMORBIDITIES AND HEALTH-RELATED QUALITY OF LIFE IN COPD IN THE EUROPEAN UNION

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OBJECTIVES: This study assesses the impact of high prevalence comorbidities reported by persons with diagnosed COPD on their health related quality of life (HRQoL). The focus is on (1) the quantitative impact of comorbidities on SF-6D utility scores, and (2) the relative impact of symptomatic vs. non-symptomatic comorbid disease states. **METHODS:** The study is based on data from the internet based 2008 National Health and Wellness Survey (NHWS) undertaken in the UK, France, Spain, Germany, and Italy. The study identified 3103 persons with diagnosed COPD together with the nine most frequently diagnosed comorbidities: pain, high blood pressure, anxiety, high cholesterol, heartburn, insomnia, depression, migraine, and arthritis. High blood pressure and high cholesterol are considered non-symptomatic comorbidities. The impact of these comorbidities on the SF-6D utility scores (range 0–1) is estimated via an ordinary least squares regression model. All comorbidities enter as categorical variables. The model includes a range of variables which have been shown in previous studies to impact HRQoL. These include: sociodemographic factors, health risk behaviors (BMI, alcohol use, smoking), and a series of country dummy variables (Germany as reference category). **RESULTS:** The model demonstrates that for symptomatic comorbidities the impact on utility scores is substantial. All symptomatic comorbidities are significant. Depression followed by pain experienced in the past 6 months have the greatest deficit impact (respectively –0.060; 95% CI –0.071 to –0.050 and –0.055; 95% CI –0.064 to –0.045). High blood pressure and high cholesterol are not significant. **CONCLUSIONS:** Claims for the negative impact of COPD on HRQoL should be seen in the context of a cluster of comorbid disease states; in particular the high prevalence disease states such as pain, anxiety and depression.